

## The impact of agile management on human resources management practices in Algeria Telecom Batna

أثر الإدارة الرشيقة على ممارسات إدارة الموارد البشرية في مؤسسة اتصالات الجزائر باتنة

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### Abstract:

This study aims to measure the impact of the agile management on human resources management practices in Algeria Telecom in Batna. The questionnaire was relied on as a main tool for collecting study data, distributed to a random sample of 50 employees, 34 of them were retrieved usable. The study found that there is a statistically significant effect of the agile management on human resources management practices at the significance level of 0.05.

**Keywords:** agile management, modern management, human resources management, human resources management practices, Algeria Telecom Batna.

**JEL Classification Codes:** M12, M15, M54.

### ملخص:

تهدف هذه الدراسة لقياس أثر الإدارة الرشيقة على ممارسات إدارة الموارد البشرية في مؤسسة اتصالات الجزائر باتنة. تم الاعتماد على الاستبيان كأداة رئيسية في جمع بيانات الدراسة، تم توزيعه على عينة عشوائية من 50 موظف، 34 منها صالحة للاستخدام. توصلت الدراسة إلى وجود أثر ذو دلالة إحصائية لأثر الإدارة الرشيقة على ممارسات إدارة الموارد البشرية عند مستوى دلالة 0.05.

**كلمات مفتاحية:** الإدارة الرشيقة، الإدارة الحديثة، إدارة الموارد البشرية، ممارسات إدارة الموارد البشرية، مؤسسة اتصالات الجزائر باتنة.

**تصنيفات JEL:** M12, M15, M54.

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**INTRODUCTION:**

The great successes of the world's leading organizations still provide us with new methods and approaches of management, which in turn derive from the environment in which they were established. This is what happened with Japanese organizations that were influenced by Japanese culture and their view of work and men's leadership. They distinguished themselves over the American organizations that for many years topped the list of the most successful and innovative organizations, and compete with them even in their own home. This made the world interested in the secret of the success of these organizations and trying to take advantage of the methods and tools that they adopt in order to reach those results.

Among the most important Japanese approaches and methods that have reached us, we find lean management, which became popular in recent years, especially with the rapid changes in the business environment, the intensity of competition and the expansion of markets and their globalization. Lean management is characterized by speed and the ability to make changes at any moment in order to respond to challenges and opportunities, and to fight every activity that does not provide added value to the work or the client, and participatory work among all the teamwork regardless of their level or ranks, and work constantly to improve methods of work with continuous learning and training.

Lean management being an integrated system that seeks to achieve the optimal use of resources within the institution in all its physical, human and financial forms, has reached all levels of the organization and all its functions without exception. Even information and communication technology service did not deviate from this path, as they found in the lean management method an opportunity to develop software and applications very quickly and more effectively. For this purpose, new methods of analyzing and developing information systems were created based on the principles and requirements of lean management, which is known as the agile management. Adopting this modern administrative method in project management depends primarily on flexible, learnable and adaptable human resources.

**Study problem:**

One of the most important pillars of lean and agile management is the continuous learning and training, which leads us to human resources, since both methods cannot be successful without resorting to individuals with certain conditions such as the ability to adapt to permanent and continuous change, the combination of various disciplines, morals and skills for teamwork in order to reach the organization's goals with zero costs.

In order to see whether there is an impact of the agile management on human resources management practices and address the aims of the study, we ask this main question: What is the impact of the agile management on the Human Resources Management practices in Algeria Telecom in Batna?

And branching out from the main question, the following questions:

- What is the impact of continuous improvement on HRM practices in Algeria Telecom Batna?
- What is the impact of multifunctional human resources on HRM practices in Algeria Telecom Batna?
- What is the impact of six sigma on HRM practices in Algeria Telecom Batna?

- Are there statistically significant differences for the demographic variables for the impact of agile management on HRM practices in Algeria Telecom Batna?

**Main hypothesis:**

There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of the agile management on the HRM practices in Algeria Telecom Batna.

**Sub-hypotheses:**

- There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of continuous improvement on HRM practices in Algeria Telecom Batna.
- There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of multifunctional human resources on HRM practices in Algeria Telecom Batna.
- There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of six sigma on HRM practices in Algeria Telecom Batna.
- There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for the demographic variables for the impact of agile management on HRM practices in Algeria Telecom Batna.

**The study objectives:**

We mainly aim through this study to measure the impact of the agile management on the HRM practices. Also, we shall highlight the agile management tools and the HRM practices applied in the institution studied.

**The importance of the subject:**

The study derives its importance from many considerations, including the following:

- Study the topic by providing a theoretical framework that defines the concept of agile management and human resource management.
- Highlighting the impact of agile management on HRM practices.
- Examining the extent to which the concept of agile management has been adopted in the Algerian public sector.

**The methodology used in the study:**

The descriptive analytical approach was adopted to describe the impact of agile management on human resources practices, we relied on the questionnaire to collect information on a random sample of 34 workers from within the Department of Algeria Telecom Batna. The results were analyzed using the SPSS program.

**Previous studies:**

a. The study of (Hussain Walid Hussain, 2018) titled: “**lean thinking practices of human resource management and their role in enhancing the strategic vigilance of the organization**”, this study aimed to identify the reality and importance of lean thinking and tried to identify its most important pillars and tools, also diagnosing the degree of contribution of lean thinking to human resource management in enhancing strategic vigilance. One of the mains hypothesis suggested that lean thinking of human resource management has a significant effect on enhancing strategic vigilance in the organization under study. The researcher relied on the descriptive analytical method based on the questionnaire as a main tool for collecting research data. The study revealed a set of results, the most important of which is the validity of the previous hypothesis, and that the HRM seeks to develop the lean behaviors of employees in the organization through the lean thinking practices that it adopted.

b. The study of (Pedro José Martínez-Jurado and others, 2013) titled: “**Human resource management in Lean Production adoption and implementation processes: Success factors in the aeronautics industry**”, this study aimed to mainly to identify the HR explanatory success factors during the different phases of the transition process to lean production. The main research question is how do companies manage their human resources in such a way that they ease the transition process towards lean production and move it forwards? The researchers relied on the descriptive analytical method using the interview as a tool to collect data from a number of senior managers in the aeronautics industry. The study concluded that there is an important role that people play before and during the lean production adoption process as HRM seeks to discover which aspects favor workers’ adaptation to this management system. It also gives the success factors in human resource management once the adoption process has concluded and while advances are being made in lean production implementation.

### **1- The agile management:**

#### **1-1- Definition of agile management:**

The agile management is a developmental and gradual methodology for parts of information systems that work in short cycles. Its main goal is to adapt to changing costumers demands most often occurring during the project, by correcting and modifying the objectives and plans of the project before it is fully mature. (Khalil, 2011, pp.22-30)

#### **1-2- Principles of agile management:**

According to the Agile Manifesto<sup>\*</sup>, the agile management follows twelve (12) principles, and it mainly aims for the customer satisfaction through early and continuous delivery of valuable software; while welcoming changes and embracing them even at late stages of developments. Also the reliance in building projects on motivated individuals, while providing the appropriate environment and the necessary support, and giving them confidence in order to complete the work. The most effective way to communicate and for information flow between the development team members is through face-to-face conversations (Beck and others, 2001, <https://agilemanifesto.org/principles.html>).

#### **1-3- The agility tools:**

Agile management methodology has many tools that can be used in order to obtain the desired results, and as follows the most frequent and common tools applied in the service sector: (Jassem, Zobayri, 2016, pp.7-10)

##### **1-3-1- Continuous improvement**

A Japanese method for introducing small, simple and continuous improvements in products, services and processes, reducing costs and all sorts of wastes, and increasing productivity.

##### **1-3-2- Multifunctional human resources**

HR must be trained to perform more than one job, in order to provide more diverse services. Workers can develop multiple skills, when rotated in more than one workstation, which can be beneficial in understanding the work in all its dimensions.

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<sup>\*</sup> The Agile Manifesto is a brief document built on 4 values and 12 principles for agile software development, published in 2001, made by 17 software development practitioners named as The Agile Alliance.

### **1-3-3- Six sigma**

According to this tool, the focus is on the deviations or changes in any process within the system. It allows the organization to infer how many defects (on average) are occurring in the process. These defects are a deviation from previously defined binding limits, and the product that falls outside these limits is considered a defective product.

### **1-4- The agile management adoption:**

Certainly, some changes must be made when adopting the agile management method, changes that allow a shift from the classic management methods. What we consider as necessary to start with is the organizational culture since individual roles are no longer recommendable. Therefore, human resources are not going to be trained individually, instead they will be trained collectively on communicating, expressing opinions, feed-back, solving problems and decision-making. Also, the change includes a shift from intensive process development to short, iterative, well-tested development cycles. (Alhroub, 2016, pp.36-38)

## **2- Human resources management (HRM):**

### **2-1-HRM definition:**

HRM is an integrated system of programs, policies and behaviors that create competitive advantages and strategies for enterprises.(Youcef, 2017, p.12) HRM seeks to plan, organize, direct, control, train and motivate the workforce and work on their integration and preservation in order to achieve the goals. (Allaoui, 2022, p.126) The effectiveness of HRM stems from the existence of a set of coherent policies that manage administrative processes and practices in human resource issues, in line with the objectives of the organization on one hand, and in line with the new concepts of HRM and the correct view of the human element as a partner on the other hand. (Almaghribi, 2013, p.24)

### **2-2- Why is HRM is important:**

According to (Morjane, 2012, pp.42-43), HRM's main focus is the human resource and it can't be abandoned by any organization who seeks success and goals achievement. It helps HR develop their abilities and skills, motivates them, listens to their demands and provides better communication at all levels, which leads to workforce stability in the organization.

### **2-3- HRM practices:**

Studies have identified several HRM practices, and most researchers agree that HRM has some best practices the organization must implement in order to achieve its goals.

#### **2-3-1-HR planning:**

HR planning is considered as one of the most substantial practices performed by the HRM department. It addresses current and potential workers' problems, and ensures the availability of the appropriate number and type of HR working for the organization at the appropriate time and place to achieve goals and missions that are required to be performed in the present and future. (Boucharch, Mhamdia, 2016, p.264)

#### **2-3-2- Job analysis and description:**

As stated by (Koubaa, 2011, p.18), job analysis is the process of gathering information about the characteristics of each job by answering these questions:

- What activities are required from the employee?
- What are the qualifications and capabilities required to do these jobs?
- How and with what tools are needed to accomplish those and activities?

And of course the output must be determined in order to spot any deviations in the performance.

As a result to the previous operation, we have a coordinated composed description of the job and its obligations, duties and working conditions. The person who is responsible for job description must have direct contact with employees and is aware of all details and subtleties. (Boucharch, Mhamdia, 2016, p.266)

### **2-3-3- HR selecting and hiring:**

Human resources are regarded as the most important asset in any organization, so it is important and necessary to hire people with appropriate skills and abilities. HR recruiting is an interaction with different key stages, all of which cooperate to improve the odds of tracking down the best candidates for the advertised positions.

Relying on internal recruitment from inside the organization, is usually for jobs that require experiences that are not available outside the organization or in the case of supervisory jobs.

When recruiting externally, and in order to get selected, the candidates are required to go through various interviews and sometimes contests.

The process of selecting and hiring is the selection of the right person from among a group of applicants in order to place the right individual in the right job that matches the requirements to be carried out with his qualifications and competencies. (Rahmani, Labrag, 2021, pp.587-590)

### **2-3-4- HR training and development:**

HR training is a planned, coordinated, and continuous process of developing human resource behaviors to improve performance and gain experience, by expanding their knowledge and refining their skills and abilities. (Bouhdid, 2016, p.105) considers HR training as an investment that benefits the organization by increasing productivity.

Certainly, HR training methods differ depending on the purpose of training. As stated by (Bal, Ertemsir, 2012, p.871) HR training and development can be in the form of instructor-led, case study, behavior modeling, role-playing, on-the-job training, job rotation, internships, apprenticeship training... etc.

### **2-3-5- HR compensation and motivation:**

HR compensation and motivation is an external stimulus works to create or move the impulse (internal stimulus) in a way that leads to the satisfaction of the individual and directs him towards a specific behavior consistent with the performance required. (Sebkhaoui, 2017, pp.222-223)

Motivations are represented in all the tools, plans, and methods used to start, stop, encourage or activate behavior, manage its direction or change its severity.(Ghazi, 2013, pp.8-9)

Motivations and compensations aim to attract the best human elements to work in the organization, keeping them and pushing them to the best level of performance (Dorra, Alsabagh, 2010, p.346)

(Al Djerid, 2007, pp.12-23) had listed different types of motivations that can affect HR and direct them towards achieving the organization's goals as following:

- **Direct compensation:** salary, bonuses, hourly wages, promotion, linking pay to production... etc.

- **Indirect compensation:** healthcare, gym membership, insurance, retirement plan... etc.
- **Non-monetary compensation:** participation in decision making, lunches, recognition, awards, assignment of leadership, trust, job enrichment... etc.
- **Positive motivations:** a reward for employees to increase production and improve its quality and present constructive suggestions and ideas.
- **Negative motivations:** used to prevent, correct, and reduce negative behavior from occurring or recurring.

### 3- Case study and analysis of results

The field study was conducted at Algeria Telecom in Batna, which is located in the city center.

#### 3-1- Study population and sample:

The study population includes the employees of Algeria Telecom in Batna.

**Table (1): Listwise deletion based on all variables in the procedure.**

		N	Percentage
<b>Cases</b>	Valid	34	89,5
	Excluded	4	10,5
	Total	38	100,0

Source: Prepared by the two researchers based on SPSS output

In order to obtain real results and the possibility of generalizing the results of the subject of the study, we resorted to using the random sample method, distributing 50 questionnaires. The response rate was estimated at 76% (38 responses). Not all of them were valid for study, but only 34 of them.

#### 3-2- Stability of the study instrument:

The "Cronbach's Alpha" equation was used to ensure the stability of the study instrument using the Statistical Package for Social Sciences (SPSS) version, and the results are shown in the table below as follows:

**Table (2) : reliability statistics**

Cronbach's Alpha	N of Items
0,963	24

Source: Prepared by the two researchers based on SPSS output

It is clear from Table (2) that the general stability coefficient of the two chapters of the study is high, reaching 0.963 for the total paragraphs of the questionnaire, and this indicates that the questionnaire has a high degree of stability, that is, it can be relied upon in the field application of the study according to the Nanley scale (0.70), which was adopted as 0.70 as a limit minimum stability.

#### 3-3- The normal distribution test:

**Table (3): normal distribution test**

Chapter	Kolmogorov-Smirnov	
	Statistic	Sig
<b>Agile management</b>	0,085	0,200
<b>Human resources</b>	0,114	0,200

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<b>management</b>		
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Source: Prepared by the two researchers based on SPSS output

The table (3) indicates that the two chapters of the study “Agile management” and “Human resources management” follow a normal distribution at the 0.05 significance level, where the distribution ratios were greater than 0.05. This confirms that the data follow a normal distribution.

**3-4- Description of the study sample in terms of personal characteristics:**

Information about the study sample with regard to (gender, educational qualification, professional experience) based on frequencies and percentages.

**Table (4) : Gender frequency**

		Frequency	Percentage	Valid Percent	Cumulative Percent
<b>Valid</b>	Male	11	32,4	32,4	32,4
	Female	23	67,6	67,6	100,0
	Total	34	100,0	100,0	

Source: Prepared by the two researchers based on SPSS output

According to the table (4) the largest percentage of respondents was for the female category, at 67.6%. The reason is due to the nature of the institution's work, as it is of an administrative nature.

**Table(5): Educational level frequency**

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Baccalaureate	9	26,5	26,5	26,5
	Academic	25	73,5	73,5	100,0
	Total	34	100,0	100,0	

Source: Prepared by the two researchers based on SPSS output

According to the table (5) the results of the study also showed that there is diversity in terms of academic qualifications, and we found that 73.5% belonged to the academic category, the ones with university diplomas, and 26.5% to baccalaureate holders.

**Table (6) : Professional experience frequency**

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	less than 5 years	4	11,8	11,8	11,8
	between 5 and 10 years	14	41,2	41,2	52,9
	more than 10 years	16	47,1	47,1	100,0
	Total	34	100,0	100,0	

Source: Prepared by the two researchers based on SPSS output

According to the table (6) the division of respondents according to professional experience was 47.1% for a category of 11 years and over. It was followed by a category between 5-10 with 41.2%. While the less than 5 years category occupied 11.8%.



**3-5- The answers of the study questions and commenting on the results:**

The results of the arithmetic averages and standard deviations of the responses of the study sample members will be calculated and analyzed on the statements of the first and second chapters “Agile management” and “Human resource management”. The standard values of the five-point Likert scale were determined to answer the questions of the study using the arithmetic averages of the trends of the study sample members in the institution under study, and we gave each result a value according to the degree given to the answer categories as follows:

(1 - 2.33) weak

(2.34 - 3.67) medium

(3.68 – 5) high

**3-5-1- Paragraph analysis of the first chapter (Agile management):**

The phrases of the Agile management chapter are summarized as follows:

**Table (7) : The results of the answers of the study sample on the chapter Agile management’s paragraphs**

		<b>Phrases</b>	<b>Range</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Degree of approval</b>
<b>Continuous improvement</b>	1	The organization makes simple and continuous changes to the services	4	2,3500	1,0700	Medium
	2	The organization relies on the results of the performance of employees to make the necessary improvements	4	2,7100	1,2680	Medium
	3	The organization seeks to identify the basis of the problems to be addressed	4	3,1800	1,1930	Medium
				<b>2,7466</b>	<b>1,1770</b>	<b>Medium</b>
<b>Multifunctional human resources</b>	4	Workers are trained to work in different departments	4	3,0600	1,2050	Medium
	5	Employees are rotated into different specializations within the organization	4	3,4400	1,1600	Medium
	6	Sometimes the worker has to perform the tasks of other temporarily vacant jobs to develop skills	4	3,0300	1,1930	Medium
				<b>3,1766</b>	<b>1,1860</b>	<b>Medium</b>
<b>Six sigma</b>	7	The organization strives to accurately analyze problems	4	3,3200	1,3420	Medium
	8	The desired results are predetermined and compared with the actual results	4	3,3500	1,0700	Medium

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	9	The organization carefully monitors the implementation of problem solutions	4	3,3200	1,1210	Medium
				<b>3,3300</b>	<b>1,1776</b>	<b>Medium</b>
		Valid N (listwise)		3,0844	1,1802	Medium

Source: Prepared by the two researchers based on SPSS output

According to the table (7), it shows the average degree of agreement of the study sample on the chapter of Agile management, where the 5<sup>th</sup> term “Employees are rotated into different specializations within the organization” came in first place with an arithmetic average of (3.4400) and a Std deviation of (1.1600).

The 1<sup>st</sup> term “The organization makes simple and continuous changes to the services” came in last with an arithmetic range of (2.3500) and a Std deviation of (1.0700).

**3-5-2- Paragraph analysis of the second chapter (Human resource management):**

The phrases of the Human resources management chapter are summarized as follows:

**Table (8): The results of the answers of the study sample on the chapter Human resource management paragraphs**

			Range	Mean	Std. Deviation	Degree of approval
<b>HR planning</b>	10	The organization ensures that the appropriate quantity and quality of human resources are available at the necessary time	4	3,0900	1,0550	Medium
	11	The organization depends in determining its needs of human resources on the goals of the organization	4	2,8800	1,1490	Medium
	12	The organization seeks to identify the gap between the current human resources and what they need in the future	3	3,3500	1,0700	Medium
				<b>3,1066</b>	<b>1,0913</b>	<b>Medium</b>
<b>Job analysis and description</b>	13	The organization collects information about the characteristics of each job and what distinguishes it from others	4	3,3800	1,1010	Medium
	14	The job tasks are precisely defined so that it is easy for the employee to complete them	4	2,8500	1,1050	Medium

	15	The relationship of the job to other complementary jobs is determined	3	3,0000	0,9850	Medium
				<b>3,0766</b>	<b>1,0636</b>	<b>Medium</b>
<b>HR selecting and hiring</b>	16	Employees are selected based on their knowledge of the job	3	3,5600	0,9910	Medium
	17	In the selection process, management seeks to place the right worker in the right place	4	3,7600	1,1820	High
	18	Employees are promoted to higher positions instead of external recruitment	3	3,7400	1,0530	High
				<b>3,6866</b>	<b>1,0753</b>	<b>High</b>
<b>HR training and development</b>	19	The organization seeks to train employees on an ongoing basis to improve their performance	4	2,5600	1,1060	Medium
	20	Management adopts different methods of training to gain different skills	4	2,9700	1,2670	Medium
	21	The organization sets training programs in line with its objectives and job requirements	3	2,7900	1,0380	Medium
				<b>2,7733</b>	<b>1,1370</b>	<b>Medium</b>
<b>HR compensation and motivation</b>	22	The organization relies on rewards to motivate employees	3	3,3200	1,0360	Medium
	23	The direction encourages outstanding employees in various moral and material ways	3	3,8800	0,9770	High
	24	Salaries are considered as an incentive for employees to achieve satisfaction in their souls	4	2,8500	1,1050	Medium
				<b>3,3500</b>	<b>1,0393</b>	<b>Medium</b>
		Valid N (listwise)		3,1986	1,0813	Medium

Source: Prepared by the two researchers based on SPSS output

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According to the table (8), it shows the average degree of agreement of the study sample on the chapter of Human resources management, where the 23<sup>rd</sup> term “The direction encourages outstanding employees in various moral and material ways” came in first place with an arithmetic average of (3.8800) and a Std deviation of (0.9770).

The 19<sup>th</sup> term “The organization seeks to train employees on an ongoing basis to improve their performance” came in last with an arithmetic range of (2.5600) and a Std deviation of (1.1060).

**3-6- Hypothesis testing:**

**3-6-1- Main hypothesis:** There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of the agile management on the HRM practices in Algeria Telecom Batna.

Null hypothesis  $H_0$ : There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for agile management on HRM practices in Algeria Telecom Batna.

Alternative Hypothesis  $H_1$ : There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for agile management on HRM practices in Algeria Telecom Batna.

To test this hypothesis, the researchers used the analysis of variance (ANOVA) method.

**Table (9): The result of multiple regression analysis to test the effect of agile management on HRM practices**

Chapter	Correlation coefficient R	Coefficient of determination R <sup>2</sup>	F	Sig
Constant Agile management	0,839	0,703	75,821	0,000

Source: Prepared by the two researchers based on SPSS output

The table (9) indicates the impact of agile management on HRM practices in the studied institution.

- The value R is the correlation coefficient between the agile management as an independent variable and the human resources management as a dependent variable, and it reached (0.839) indicating a strong correlation relationship.
- The value R<sup>2</sup> is (0.703) meaning the dependent variable “agile management” explains about 70% of the variance and changes in the dependent variable “human resources management”.
- We notice the value F was estimated at (75.821) at (0.000) significance level and it is less than the required significance level (0.05).

Hence, we reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant effect at the significance level of 0.05 for the independent variable “agile management” on the dependent “human resources management” variable in Algeria Telecom Batna.

**3-6-2- Sub-hypotheses:**

**First sub-hypothesis:** There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of continuous improvement on HRM practices in Algeria Telecom Batna.

Null hypothesis  $H_0$ : There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for continuous improvement on HRM practices in Algeria Telecom Batna.

Alternative Hypothesis  $H_1$ : There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for continuous improvement on HRM practices in Algeria Telecom Batna.

To test this hypothesis, the researchers used the analysis of variance (ANOVA) method.

**Table (10): The result of simple regression analysis to test the effect of continuous improvement on HRM practices**

Chapter	Correlation coefficient R	Coefficient of determination $R^2$	B Coefficients	F	T	Sig
Constant continuous improvement	0,697	0,486	-	30,252	-	0,000
			1,583		5,078	0,000
			0,589		5,500	0,000

Source: Prepared by the two researchers based on SPSS output

The table (10) indicates the effect of continuous improvement on HRM practices in the studied institution.

- The value R is the correlation coefficient between the continuous improvement as an independent variable and the human resources management as a dependent variable, and it reached (0.697) indicating a strong correlation relationship.
- The value  $R^2$  is (0.486) meaning the dependent variable “continuous improvement” explains about 48.6% of the variance and changes in the dependent variable “human resources management”.
- The model is significant since the values F (30.252) and T (5.500) at (0.000) significance level which is less than the required significance level (0.05).
- The value B which indicates the impact factor is (0.589), indicating the positive effect in the relationship between the two variables. Meaning the application of continuous improvement will lead to effective HRM practices.

Hence, we reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant effect at the significance level of 0.05 for the independent variable “continuous improvement” on the dependent “human resources management” variable in Algeria Telecom Batna.

**Second sub-hypothesis:** There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of multifunctional human resources on HRM practices in Algeria Telecom Batna.

Null hypothesis  $H_0$ : There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for multifunctional human resources on HRM practices in Algeria Telecom Batna.

Alternative Hypothesis  $H_1$ : There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for multifunctional human resources on HRM practices in Algeria Telecom Batna.

To test this hypothesis, the researchers used the analysis of variance (ANOVA) method.

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**Table (11):The result of simple regression analysis to test the effect of multifunctional human resources on HRM practices**

Chapter	Correlation coefficient R	Coefficient of determination R <sup>2</sup>	B Coefficients	F	T	Sig
<b>Constant multifunctional human resources</b>	0,696	0,484	-	30,043	-	0,000
			1,424		4,188	0,000
			0,559		5,481	0,000

Source: Prepared by the two researchers based on SPSS output

The table (11) indicates the effect of multifunctional human resources on HRM practices in the studied institution.

- The value R is the correlation coefficient between the multifunctional human resources as an independent variable and the human resources management as a dependent variable, and it reached (0.696) indicating a strong correlation relationship.
- The value R<sup>2</sup> is (0.484) meaning the dependent variable “multifunctional human resources” explains about 48.4% of the variance and changes in the dependent variable “human resources management”.
- The model is significant since the values F (30.043) and T (5.481) at (0.000) significance level which is less than the required significance level (0.05).
- The value B which indicates the impact factor is (0.559), indicating the positive effect in the relationship between the two variables. Meaning the application of multifunctional human resources will lead to effective HRM practices.

Hence, we reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant effect at the significance level of 0.05 for the independent variable “multifunctional human resources” on the dependent “human resources management” variable in Algeria Telecom Batna.

**Third sub-hypothesis:** There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  of six sigma on HRM practices in Algeria Telecom Batna.

Null hypothesis H<sub>0</sub>: There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for six sigma on HRM practices in Algeria Telecom Batna.

Alternative Hypothesis H<sub>1</sub>: There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for six sigma on HRM practices in Algeria Telecom Batna.

To test this hypothesis, the researchers used the analysis of variance (ANOVA) method.

**Table (12):The result of simple regression analysis to test the effect of six sigma on HRM practices**

Chapter	Correlation coefficient R	Coefficient of determination R <sup>2</sup>	B Coefficients	F	T	Sig
<b>Constant Six sigma</b>	0,826	0,683	-	68,924	-	0,000
			1,137		4,352	0,000
			0,619		8,302	0,000

Source: Prepared by the two researchers based on SPSS output

The table (12) indicates the effect of six sigma on HRM practices in the studied institution.

- The value R is the correlation coefficient between the six sigma as an independent variable and the human resources management as a dependent variable, and it reached (0.826) indicating a strong correlation relationship.
- The value  $R^2$  is (0.683) meaning the dependent variable “six sigma” explains about 68.3% of the variance and changes in the dependent variable “human resources management”.
- The model is significant since the values F (68.924) and T (8.302) at (0.000) significance level which is less than the required significance level (0.05).
- The value B which indicates the impact factor is (0.619), indicating the positive effect in the relationship between the two variables. Meaning the application of six sigma will lead to effective HRM practices.

Hence, we reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant effect at the significance level of 0.05 for the independent variable “six sigma” on the dependent “human resources management” variable in Algeria Telecom Batna.

**Fourth sub-hypothesis:** There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for the demographic variables for the impact of agile management on HRM practices in Algeria Telecom Batna.

Null hypothesis  $H_0$ : There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for the demographic variables for the impact of agile management on HRM practices in Algeria Telecom Batna.

Alternative Hypothesis  $H_1$ : There is a statistically significant effect at a significant level  $\alpha \leq 0.05$  for the demographic variables for the impact of agile management on HRM practices in Algeria Telecom Batna.

To test this hypothesis, the researchers used the analysis of variance (ANOVA) method.

**a. By educational level:**

**Table (13): Descriptive by educational level**

		N	Mean
<b>Continuous improvement</b>	Baccalaureate	9	3,1481
	Academic	25	2,6000
	Total	34	2,7451
<b>Multifunctional human resources</b>	baccalaureate	9	3,4815
	academic	25	3,0667
	Total	34	3,1765
<b>Six sigma</b>	baccalaureate	9	3,4815
	academic	25	3,2800
	Total	34	3,3333

Source: Prepared by the two researchers based on SPSS output

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The table (13) shows the descriptive by the educational level according to the agility tools we dealt with in the study (continuous improvement, multifunctional human resources, six sigma).

**Table (14): One-way analysis of the differences in the respondents' answers about the impact of agile management on human resource management practices according to the educational level variable**

		Sum of Squares	df	Mean Square	F	Sig.
<b>Continuous improvement</b>	Between Groups	1,988	1	1,988	2,151	0,152
	Within Groups	29,580	32	0,924		
	Total	31,569	33			
<b>Multifunctional human resources</b>	Between Groups	1,139	1	1,139	1,078	0,307
	Within Groups	33,802	32	1,056		
	Total	34,941	33			
<b>Six sigma</b>	Between Groups	0,269	1	0,269	0,215	0,646
	Within Groups	39,954	32	1,249		
	Total	40,222	33			

Source: Prepared by the two researchers based on SPSS output

According to the table (14) we find that the model is not statistically significant since significance level is greater than the one adopted in the study (0.005). Thus, there are no statistically significant differences in the answers of the respondents in terms of educational level.

**b. By professional experience:**

**Table (15): Descriptive by professional experience**

		N	Mean
<b>Continuous improvement</b>	less than 5 years	4	3,4167
	between 5 and 10 years	14	2,5952
	more than 10 years	16	2,7083
	Total	34	2,7451
<b>Multifunctional human resources</b>	less than 5 years	4	3,8333
	between 5 and 10 years	14	3,3095
	more than 10 years	16	2,8958
	Total	34	3,1765
<b>Six sigma</b>	less than 5 years	4	4,3333
	between 5 and 10 years	14	3,2619
	more than 10 years	16	3,1458
	Total	34	3,3333

Source: Prepared by the two researchers based on SPSS output



The table (15) shows the descriptive by the professional experience according to the agility tools we dealt with in the study (continuous improvement, multifunctional human resources, six sigma).

**Table (16): One-way analysis of the differences in the respondents' answers about the impact of agile management on human resource management practices according to the variable of professional experience**

		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Continuous improvement</b>	Between Groups	2,140	2	1,070	1,127	0,337
	Within Groups	29,429	31	0,949		
	Total	31,569	33			
<b>Multifunctional human resources</b>	Between Groups	3,234	2	1,617	1,581	0,222
	Within Groups	31,707	31	1,023		
	Total	34,941	33			
<b>Six sigma</b>	Between Groups	4,634	2	2,317	2,018	0,150
	Within Groups	35,588	31	1,148		
	Total	40,222	33			

Source: Prepared by the two researchers based on SPSS output

According to the table (16) we find that the model is not statistically significant since significance level is greater than the one adopted in the study (0.005). Thus, there are no statistically significant differences in the answers of the respondents in terms of professional experience.

**c. By gender:**

**Table (17): Descriptive by gender**

		<b>N</b>	<b>Mean</b>
<b>Continuous improvement</b>	Male	11	2,8182
	female	23	2,7101
	Total	34	2,7451
<b>Multifunctional human resources</b>	Male	11	3,4545
	female	23	3,0435
	Total	34	3,1765
<b>Six sigma</b>	Male	11	3,7576
	female	23	3,1304
	Total	34	3,3333

Source: Prepared by the two researchers based on SPSS output

The table (17) shows the descriptive by gender according to the agility tools we dealt with in the study (continuous improvement, multifunctional human resources, six sigma).

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**Table (18): One-way analysis of the differences in the respondents' answers about the impact of agile management on human resource management practices according to the variable of gender**

		Sum of Squares	Df	Mean Square	F	Sig.
<b>Continuous improvement</b>	Between Groups	0,087	1	0,087	0,088	0,768
	Within Groups	31,482	32	0,984		
	Total	31,569	33			
<b>Multifunctional human resources</b>	Between Groups	1,257	1	1,257	1,195	0,283
	Within Groups	33,684	32	1,053		
	Total	34,941	33			
<b>Six sigma</b>	Between Groups	2,927	1	2,927	2,511	0,123
	Within Groups	37,296	32	1,165		
	Total	40,222	33			

Source: Prepared by the two researchers based on SPSS output

According to the table (18) we find that the model is not statistically significant since significance level is greater than the one adopted in the study (0.005). Thus, there are no statistically significant differences in the answers of the respondents in terms of gender.

Therefore we accept the null hypothesis that states: There is no statistically significant effect at a significant level  $\alpha \leq 0.05$  for the demographic variables (educational level, professional experience, gender) for the impact of agile management on HRM practices in Algeria Telecom Batna and refuse the alternative hypothesis.

**Conclusion:**

The aim of this study was to know the impact of agile management on human resource management practices in Algeria Telecom Batna, and after analyzing and interpreting the outcomes of the study and testing hypotheses, the following results and suggestions were made:

**The results:**

- The degree of adoption of continuous improvement within the institution came to a medium degree with an arithmetic average of (2.7466), this indicates that the administration is not making sufficient efforts to identify the root causes of the problems, analyze them and make the necessary improvements in order to solve them and not face them again in the future.
- The degree of adoption of multifunctional human resource within the institution came to a medium degree with an arithmetic average of (3.1766), showing that the

administration is not interested in building multi skills into individuals by keeping the employee focused on his specialty and not be able to work in other fields.

- The degree of implementing six sigma within the institution also came to a medium degree with an arithmetic average of (3.3300), showing that the institution does not accurately identify work problems, and does not care about increasing efficiency by not being careful to supervise the application of problem solutions.
- The application of HRM practices covered in the study all came to a medium degree except for the human resources selecting and hiring that came to a high degree with an arithmetic average of (3.6866), explaining that the administration shows a great interest in hiring the right worker in the right place and prefers to exploit internal talents when promoting instead of relying on external recruitment.

### **Recommendations:**

- The necessity of the administration's commitment to spreading the culture of continuous improvement, which is the essence of agile management, through which the institution has the ability to keep pace with various developments and gain the loyalty of the customer to whom services are provided in the shortest time and with the best quality.
- The administration should pay attention to the importance of training the worker to fill different specialties, this can help fill the employment gaps and at the same time provide several aspects and ideas to solve problems, everyone can contribute to that and everyone is concerned.
- In order to improve the effectiveness of performance, the organization must seek to analyze the roots of problems and ensure the implementation of their solutions and learn from them in a way that ensures not facing them again in the future.
- The institution must take all HRM practices seriously, as they are complementary practices to each other and contribute significantly and directly to the achievement of various goals and not focus on selecting and hiring over others.

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